



The Caribbean area: a prime example for cooperation in research, surveillance and education in animal health

With its large variety of ecosystems and farming methods, socio-economic disparities and subject to the intensification of trade, the Caribbean is a region conducive to the emergence of animal and zoonotic infectious diseases.

In this context, the Joint Research Unit CIRAD-INRA «Controlling exotic and emerging animal diseases» (UMR CMAEE) and the Caribbean Animal Health Network (CaribVET) in collaboration with numerous partners, is coordinating ambitious research programs and is monitoring animal and zoonotic infectious diseases.

The European Epigenesis project (2013-2016), «One Health» 'vector-based and emerging diseases approach', piloted by CIRAD, has led to major advances and opened new perspectives and the start of new European projects.



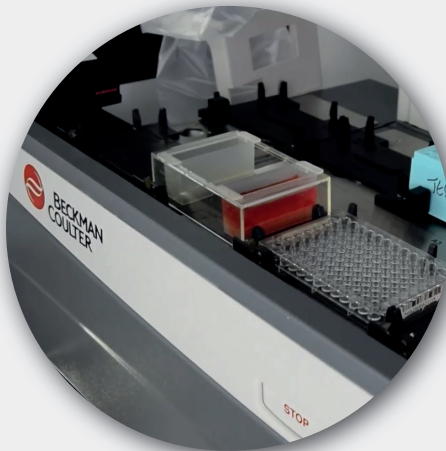
Key Results of the Epigenesis project

> **Guadeloupe research has been strengthened and integrated into the European Research Area:** partnership with European centers of excellence (IRTA-CreSA, ITQB, iBET, INRA, EHESP, AviaGIS), the Caribbean (CENSA, UWI, UA, ministries of agriculture of the Caribbean) and other regional and international organizations members of CaribVET.

> **Guadeloupean Research Potential increased in several scientific disciplines:** medical entomology, microbiology, proteomics, spatial epidemiology, bioinformatics and health economics.

> **High Security Laboratory and advanced technological platforms (analysis of proteins, genes, pathogens);** operational systems open to regional and international partners

> **Shared knowledge and dissemination of innovations through the organization of training courses, regional workshops and international conferences:** ICAHS 2 (Havana, Cuba 2014); 1st regional conference on research and animal health surveillance (Guadeloupe, 2015); Session animal health in the Caribbean ESVV-Epizone Congress (Montpellier, 2015).





Major scientific achievements

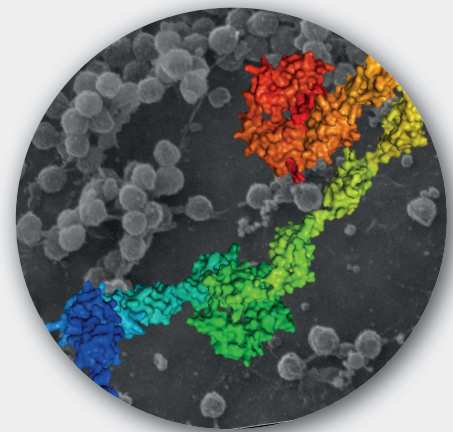
Better understanding of the pathogenesis of bacterium *Ehrlichia ruminantium* through molecular biology, cell, genomics and proteomics; development of effective vaccines against heartwater – a fatal disease affecting ruminants.

Better knowledge of potential vectors of West Nile virus:

- Inventory of coastal wetlands species
- Population dynamics
- Trophic preferences

New tools for epidemiological monitoring, risk assessment and disease control:

- «VacciCost» evaluating the cost of livestock vaccination campaigns
- «Caribbean Veterinary Information System» platform of GIS, monitoring and mapping tools
- «Risk Swine tool» risk of introduction of swine diseases
- Early Warning Tools and health surveillance: anticipating disease emergence in the Caribbean
- Identification keys for mosquitoes in Guadeloupe



Improved network of partners

Europe: Centre de Recerca en Sanitat Animal (IRTA-CReSA); Instituto de Biología Experimental Tecnológica (iBET); Instituto de Tecnología Química et Biológica (ITQB); UMR-INRA-Oniris, BioEPA Institut National de la Recherche Agronomique (Inra); École des Hautes Études de Santé Publique (EHESP); Agriculture and Veterinary Information and Analysis (AviaGIS).

USA: USDA-ARS; Oklahoma State University; College of Medicine; Texas A&M University; University of Arkansas for Medical Sciences.

Guadeloupe: Inra; Pasteur Institute (IPG); University of Antilles (UA); Regional Health Agency (ARS); University Hospital (CHU); Inserm

Caribbean: Veterinary services and veterinary diagnostic laboratories in 33 countries and territories; Centro Nacional de Sanidad; agropecuaria (CENSA); University of the West Indies (UWI); United States Department of Agriculture – Animal and Plant Health Inspection Services (USDA-APHIS); CARICOM Secretariat; Caribbean Agriculture Health and Food Safety (CAHFSA); Inter American Institute for Cooperation on Agriculture (IICA); World Health Organization for Animal Health (OIE); Food and Agriculture Organization (FAO); Pan American Health Organization (PAHO/WHO).

South America: Instituto Nacional de Tecnología Agropecuaria (INTA), Argentina

Africa: Université Eduardo Mondlane, Mozambique; Institut Sénégalais de Recherches Agricoles (ISRA).

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